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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/060,501	01/30/2002	Dennis W. Janes	85939.000217	8924

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EXAMINER	
KRUER, KEVIN R	

ART UNIT	PAPER NUMBER
1773	

DATE MAILED: 10/06/2004

Please find below and/or attached an Office communication concerning this application or proceeding.

Office Action Summary	Application No.	Applicant(s)	
	10/060,501	JANES ET AL.	
	Examiner	Art Unit	
	Kevin R Kruer	1773	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

1)☒ Responsive to communication(s) filed on *27 July 2004*.

2a)☒ This action is **FINAL**. 2b)☐ This action is non-final.

3)☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

4)☒ Claim(s) *37-60,62-68 and 70-85* is/are pending in the application.

4a) Of the above claim(s) _____ is/are withdrawn from consideration.

5)☐ Claim(s) _____ is/are allowed.

6)☒ Claim(s) *37-60,62-68 and 70-85* is/are rejected.

7)☐ Claim(s) _____ is/are objected to.

8)☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

9)☐ The specification is objected to by the Examiner.

10)☒ The drawing(s) filed on *30 January 2002* is/are: a)☒ accepted or b)☐ objected to by the Examiner.

Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).

Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).

11)☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

12)☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).

a)☐ All b)☐ Some * c)☐ None of:

1.☐ Certified copies of the priority documents have been received.

2.☐ Certified copies of the priority documents have been received in Application No. _____.

3.☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

1) ☒ Notice of References Cited (PTO-892)
2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
3) ☐ Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08) Paper No(s)/Mail Date _____.
4) ☐ Interview Summary (PTO-413) Paper No(s)/Mail Date. _____ .
5) ☐ Notice of Informal Patent Application (PTO-152)
6) ☐ Other: _____.

DETAILED ACTION

Double Patenting

1. The text of those sections of Title 35, U.S. Code not included in this action can be found in a prior Office action.

2. The rejection of claims 61 and 69 under 35 U.S.C. 101 as claiming the same invention as that of claims 17,and 24 of prior U.S. Patent No. 6,406,785 has been overcome by amendment. Applicant deleted claims 61 and 69.

3. Claims 37-60, 62-68, and 70-85 are rejected under the judicially created doctrine of obviousness-type double patenting as being unpatentable over claims 1-30 of prior U.S. Patent No. 6,406,785.

With regards to claims 37-40, 42-50, 52-60, 62-68, and 70-85, the conflicting claims are not identical. However the pending claims are not patentably distinct from the patented claims because the pending claims are drawn to a weather seal wherein the contact layer comprises a genus (UHMW polyethylene particles) and the claims of US 6,406,785 are drawn to a weatherseal wherein the contact layer comprises a species (crosslinked UHMW polyethylene particles) of said genus. While the conflicting claims are not identical, they are obvious variants of one another.

Claim 41 is unpatentable over claim 4 of US 6,406,785. Both claims are drawn to weatherseals comprising crosslinked UHMW polyethylene particles. However pending claim 41 is not patentably distinct from patented claim 4 because the pending claim is drawn to a weatherseal wherein the substrate is a genus (a substrate) and claim 4 of US 6,406,785 is drawn to a weatherseal wherein the substrate is a species

(EPDM, thermoplastic elastomer, or thermoplastic) of said genus. While the conflicting claims are not identical, they are obvious variants of one another.

Claim 51 is unpatentable over claim 9 of US 6,406,785. Both claims are drawn to weatherseals comprising crosslinked UHMW polyethylene particles that create surface projections. The only difference between pending claim 51 and patented claim 9 is that pending claim 51 stipulates the surface projections are "friction reducing." Pending claim 51 is not patentably distinct from patented claim 9 because all projections created by polyethylene particles are understood to be friction reducing. While the conflicting claims are not identical, they are obvious variants of one another.

Claim Rejections - 35 USC § 112

4. The following is a quotation of the first paragraph of 35 U.S.C. 112:

> The specification shall contain a written description of the invention, and of the manner and process of making and using it, in such full, clear, concise, and exact terms as to enable any person skilled in the art to which it pertains, or with which it is most nearly connected, to make and use the same and shall set forth the best mode contemplated by the inventor of carrying out his invention.

5. Claims 37-60, 62-64, 73-81, 84; and 85 are rejected under 35 U.S.C. 112, first paragraph, as failing to comply with the written description requirement. The claim(s) contains subject matter which was not described in the specification in such a way as to reasonably convey to one skilled in the relevant art that the inventor(s), at the time the application was filed, had possession of the claimed invention. The original disclosure does not contain support for the newly claimed open ranges of "greater than approximately 20 microns" or "at least approximately 20 microns." The broadest range disclosed in the original disclosure is the first paragraph on page 7 of the specification that teaches 20-200um.

Claim Rejections - 35 USC § 103

6. Claims 42, 45-48, 50, 52-58, 60, 62-66, 68, 70-72, and 85 are rejected under 35 U.S.C. 103(a) as being unpatentable over Chihara et al (US 5,115,007) in view of Nybakken et al (US 5,605,657) and Yamaguchi (US 4,511,526), as evidenced by Howell (US 5,972,520) and McCurdy et al (US 5,451,457).

Chihara teaches a weatherstrip for automobile window glass run channels in which an EPDM substrate is coated with a low friction, abrasion resistant coating composition (col 1, lines 12-19). The coating composition comprises a thermosetting polymeric binder derived from a solution comprising a blocked-polyurethane prepolymer, silicone oil, and a crosslinking agent. Compounding additives such as micropowders or polyethylene may also be included in the coating composition (col 6, lines 57-67). Said polyethylene micropowders provide the surface with a non-glossy appearance. The weatherstrips are formed by first mixing the individual components of the coating, applying the mixture to EPDM glass run channel, and then curing the coating by heat (col 10, lines 60-64).

Chihara does not disclose that the polyethylene particles are surface treated such that they contain polar chemical groups that can be chemically bonded to the thermoset carrier. However, Nybakken teaches a composition comprising a heat-cured polyurethane produced from a dispersion of a prepolymer, a curative, and a lubricant agent (abstract). Nybakken teaches that the NCO groups on the ends of the polyol that make up the urethane prepolymer are effective sites for active hydrogen terminated lubricant (col 5, lines 57+). Thus, a lubricant containing active hydrogen on its surface

treatment can be chemically bond with the urethane prepolymer and become part of the subsequent polyurethane. When the additive lubricant is chemically bonded to the polyurethane structure, the lubricant does not bleed to the surface and has a wear advantage that will remain throughout the life of the composition (col 5, lines 63+). Effective lubricants include surface-treated ultra high molecular weight polyethylenes (col 6, lines 1+). Thus, it would have been obvious to one of ordinary skill in the art at the time the invention was made to surface treat the polyethylene particles taught in Chihara so that said particles contain active hydrogen. The motivation for doing so would have been to improve the wear of the weatherstrip and to prevent the polyethylene particles from bleeding to the surface of the cured polyurethane contact layer. The examiner notes that the active hydrogen termination of the polyethylene particles is understood to read on the claimed "polar functional group."

Chihara does not teach the claimed particle size of the polyethylene powders. However, Yamaguchi teaches a weather striping material comprising a rubber base and a glass-contacting layer comprising adhesive material and particles (abstract). Yamaguchi teaches that the particle size of the particles should be large enough to reduce sliding resistance, but small enough to allow for adhesion to the sliding surface (col 6, lines 31+). Particles sizes of 5-500um are preferable. Therefore, it would have been obvious to one of ordinary skill in the art at the time the invention was made to vary the particle size of the polyethylene particles taught in Chihara. The motivation for doing so would have been to obtain low sliding resistance while maintaining adequate adhesion between the particles and the bonding material.

With respect to the limitation recited in claims 46, 55, 57, and 65 that the particle has a melting temperature greater than a curing temperature of the thermoset carrier, Chihara teaches that the polyurethane has a curing temperature of about 20°C to about 255°C (col 6, lines 6+). Since 20°C is "a curing temperature" of the polyurethane and polyethylene is known to have a melting point of about 140°C, the polyethylene taught by Chihara in view of Nybakken is understood to read on said claim limitation.

With respect to the limitation that the particles "form surface projections," Applicant's attention is directed to column 6, lines 57+ of Chihara wherein it is taught that that the polyethylene particles provide the weatherstrip with a non-glossy appearance. US 5,972,520 teaches that gloss of a surface is determined by the amount of light that is scattered when light hits the surface and is a function of the surface roughness of the object. When particles are compounded into plastics, particles on the surface scatter light and reduce gloss dramatically (col 1, lines 40+). Thus, the disclosure in Chihara that the particles provide the weatherstirp with a non-glossy appearance is understood to teach that the particles provide the surface of the weatherstrip with surface projections.

With regard to the limitation that the surface projections are "friction reducing," Applicant's attention is directed to US 5,451,457 (col 3, lines 6 and 7), which teaches that all polyethylene particles have a low coefficient of friction. Since the particles taught in Chihara comprise polyethylene, the particles are understood to inherently reduce the coefficient of friction of the weatherstrip.

The particles rendered obvious by Chihara in view of Nybakken are understood to be "sufficiently bonded to the cured thermoset urethane based carrier to preclude separation" because Nybakken teaches that such surface treated particles do not bleed and remain throughout the life of the composition.

7. Claims 78-83 are rejected under 35 U.S.C. 103(a) as being unpatentable over Chihara et al (US 5,115,007) in view of Nybakken et al (US 5,605,657) and Yamaguchi (US 4,511,526), as applied to claims 42, 45-48, 50, 52-58, 60, 62-66, 68, 70-72, and 85 above, and further in view of Hazelton et al (US 4,894,408).

Chihara in view of Nybakken is relied upon as above, but neither reference teaches that the substrate of Chihara may comprise thermoplastic elastomers. However, Hazelton teaches a thermoplastic elastomer composition (abstract) that is useful in weatherstripping applications (col 13, lines 40+). The thermoplastic elastomer comprises a thermoplastic ethylene copolymer and an EPDM rubber (abstract) and exhibits improved resilience (col 13, lines 40+). Thus, it would have been obvious to one of ordinary skill in the art at the time the invention was made to utilize the thermoplastic elastomer taught in Hazelton as the substrate taught in Chihara. The motivation for doing so would have been to improve the resilience of the substrate.

The examiner notes that Hazelton renders the "thermoplastic" substrate of claims 78, 80, and 82 obvious because the thermoplastic elastomer comprises a thermoplastic.

8. Claims 37-40, 42-50, 52-60, 62-68, 70-72, 75, 84, and 85 are rejected under 35 U.S.C. 103(a) as being unpatentable over Chihara et al (US 5,115,007) in view of

Nybakken et al (US 5,605,657), McCurdy et al (US 5,451,457), and Yamaguchi (US 4,511,526), as evidenced by Howell (US 5,972,520) and Shih (US 5,130,376).

Chihara teaches a weatherstrip for automobile window glass run channels in which an EPDM substrate is coated with a low friction, abrasion resistant coating composition (col 1, lines 12-19). The coating composition comprises a thermosetting polymeric binder derived from a solution comprising a blocked-polyurethane prepolymer, silicone oil, and a crosslinking agent. Compounding additives such as micropowders or polyethylene may also be included in the coating composition (col 6, lines 57-67). Said polyethylene micropowders provide the surface with a non-glossy appearance. The weatherstrips are formed by first mixing the individual components of the coating, applying the mixture to EPDM glass run channel, and then curing the coating by heat (col 10, lines 60-64).

Chihara et al does not specifically disclose that the polyethylene used as the micropowder additives are high molecular weight particles. However, McCurdy teaches that all polyethylene particles exhibit a low coefficient of friction when contacted with glass (col 3, lines 6 and 7), but polyethylene particles with a molecular weight of at least 1,000,000 also exhibit excellent abrasion resistance and toughness (col 2, lines 64+). Thus, it would have been obvious to one of ordinary skill in the art at the time the invention was made to utilize polyethylene particles in Chihara wherein the polyethylene has a molecular weight of greater than 1,000,000. The motivation for doing so would have been to improve the abrasion resistance and toughness of the weatherseal taught in Chihara.

Neither Chihara nor McCurdy disclose that the polyethylene particles are surface treated such that they contain polar chemical groups that can be chemically bonded to the thermoset carrier. However, Nybakken teaches a composition comprising a heat-cured polyurethane produced from a dispersion of a prepolymer, a curative, and a lubricant agent (abstract). Nybakken teaches that the NCO groups on the ends of the polyol that make up the urethane prepolymer are effective sites for active hydrogen terminated lubricant (col 5, lines 57+). Thus, a lubricant containing active hydrogen on its surface treatment can be chemically bond with the urethane prepolymer and become part of the subsequent polyurethane. When the additive lubricant is chemically bonded to the polyurethane structure, the lubricant does not bleed to the surface and has a wear advantage that will remain throughout the life of the composition (col 5, lines 63+). Effective lubricants include surface-treated ultra high molecular weight polyethylenes (col 6, lines 1+). Thus, it would have been obvious to one of ordinary skill in the art at the time the invention was made to surface treat the UHMW polyethylene particles taught by Chihara in view of McCurdy so that said particles contain active hydrogen. The motivation for doing so would have been to improve the wear of the weatherstrip and to prevent the polyethylene particles from bleeding to the surface of the cured polyurethane weatherstrip. The examiner notes that the active hydrogen termination of the UHMW polyethylene particles is understood to read on the claimed "polar functional group."

Chihara also does not teach the claimed particle size of the polyethylene powders. However, Yamaguchi teaches a weather striping material comprising a

rubber base and a glass-contacting layer comprising adhesive material and particles (abstract). Yamaguchi teaches that the particle size of the particles should be large enough to reduce sliding resistance, but small enough to allow for adhesion to the sliding surface (col 6, lines 31+). Particles sizes of 5-500um are preferable. Therefore, it would have been obvious to one of ordinary skill in the art at the time the invention was made to vary the particle size of the polyethylene particles taught in Chihara. The motivation for doing so would have been to obtain low sliding resistance while maintaining adequate adhesion between the particles and the bonding material.

With respect to the limitation recited in claims 46, 55, 57, and 65 that the particle has a melting temperature greater than a curing temperature of the thermoset carrier, applicant's attention is directed to US 5,130,376 (herein referred to as Shih). Shih teaches that UHMW polyethylene has a melting point of about 140°C. Furthermore, Chihara teaches that the polyurethane has a curing temperature of about 20°C to about 255°C (col 6, lines 6+). Since 20°C is "a curing temperature" of the polyurethane and UHMW polyethylene is known to have a melting point of about 140°C, the UHMW polyethylene taught by Chihara in view of McCurdy is understood to read on said claim limitation.

With respect to the limitation that the particles "form surface projections," Applicant's attention is directed to column 6, lines 57+ of Chihara wherein it is taught that that the polyethylene particles provide the weatherstrip with a non-glossy appearance. US 5,972,520 teaches that gloss of a surface is determined by the amount of light that is scattered when light hits the surface and is a function of the surface

roughness of the object. When particles are compounded into plastics, particles on the surface scatter light and reduce gloss dramatically (col 1, lines 40+). Thus, the teaching in Chihara that the particles provide the weatherstirp with a non-glossy appearance is understood to teach that the particles provide the surface of the weatherstrip with surface projections.

9. Claims 73, 74, and 76-83 are rejected under 35 U.S.C. 103(a) as being unpatentable over Chihara et al (US 5,115,007) in view of McCurdy et al (US 5,451,457), Nybakken et al (US 5,605,657), and Yamaguchi (US 4,511,526), as applied to claims 37-40, 42-50, 52-60, 62-68, 70-72, 75, 84, and 85 above, and further in view of Hazelton et al (US 4,894,408).

Chihara in view of McCurdy and Nybakken is relied upon as above. None of the references teach that the substrate of Chihara may comprise thermoplastic elastomers. Chihara in view of Nybakken is relied upon as above, but neither reference teaches that the substrate of Chihara may comprise thermoplastic elastomers. However, Hazelton teaches a thermoplastic elastomer composition (abstract) that is useful in weatherstripping applications (col 13, lines 40+). The thermoplastic elastomer comprises a thermoplastic ethylene copolymer and an EPDM rubber (abstract) and exhibits improved resilience (col 13, lines 40+). Thus, it would have been obvious to one of ordinary skill in the art at the time the invention was made to utilize the thermoplastic elastomer taught in Hazelton as the substrate taught in Chihara. The motivation for doing so would have been to improve the resilience of the substrate.

The examiner notes that Hazelton renders the "thermoplastic" substrate of claims 73, 76, 78, 80, and 82 obvious because the thermoplastic elastomer comprises a thermoplastic.

Response to Arguments

Applicant's arguments filed July 27, 2004 have been fully considered but they are not persuasive.

Applicant argues that the micro-powders of Chihara are not the presently recited "projection forming surface treated particles" because Chihara does not define the size of the recited micropowders. The examiner concedes that Chihara is silent to the size of the micropowders. However, Yamaguchi teaches that one of ordinary skill in the art would have known to vary the size of the micropowders taught in Chihara in order to minimize sliding resistance while maintaining the adhesion of the particles to the weatherseal.

Applicant further argues that the micropowders in Chihara do not reduce the friction of the weatherseal. The examiner respectfully disagrees. While Chihara never explicitly states that the micropowders reduce the friction of the weatherseal, Chihara does teach that that the polyethylene particles provide the weatherstrip with a non-glossy appearance. US 5,972,520 teaches that gloss of a surface is determined by the amount of light that is scattered when light hits the surface and is a function of the surface roughness of the object. When particles are compounded into plastics, particles on the surface scatter light and reduce gloss dramatically (col 1, lines 40+). Thus, the teaching in Chihara that the particles provide the weatherstirp with a non-glossy

appearance is understood to teach that the particles provide the surface of the weatherstrip with surface projections. As taught by Yamaguchi, the projections decrease the friction of the weather seal. Thus, Chihara is understood to implicitly teach the use of the particles to reduce friction.

Applicant further argues that Chihara teaches that the film should be flat. While the examiner concedes that Chihara describes his film as "flat," Chihara also describes the film as non-glossy. As taught in US 5,972,520, the gloss of a surface is determined by the amount of light that is scattered when light hits the surface and is a function of the surface roughness of the object (col 1, lines 40+). Thus, the film of Chihara is understood to possess surface roughness.

The micropowders of Chihara, according to applicant, are fillers used to control viscosity, proper hardness, and toughness to the applied film. The examiner agrees. But Chihara also teaches that the particles provide the film with a non-glossy surface. As explained above, non-glossy implies that the particles provide the film with surface roughness. As taught in Yamaguchi, such surface roughness inherently reduces the friction between the coating and the glass. By varying the particle size of the micropowder, the friction coefficient can be optimized. Thus, the examiner maintains the position that the combination of art relied upon would render obvious the claimed invention.

With regard to Nybakken, Applicant argues that the particles taught therein are coated and not surface treated as set forth in the present claims. Applicant argues that the claimed particles "have permanent changes to the structure and properties of the

particle material and particularly to include polar functional groups." However, there is no reason for one of ordinary skill in the art to interpret applicant's claims so narrowly. If Applicant wishes for the scope of the claims to be limited to particles whose structure and properties have been permanently changed, then the claim should be amended to reflect such a scope.

With regard to McCurdy, Applicant argues that the micropowders of Chihara are used as fillers and there are no bleeding or bonding issues to be improved. The examiner respectfully disagrees. As taught in McCurdy, polyethylene particles will bleed from polyurethane composition if they are not surface treated to improve compatibility. Applicant argues that the examiner has not identified any portion of Chihara that corresponds to the asserted motivation. However, the motivation to modify Chihara comes from McCurdy, not from the teachings of Chihara. Thus, Chihara does not have to recognize the deficiency for the combination of Chihara and McCurdy to be proper.

Applicant argues that the proposed substitution of Chihara's EPDM substrate with a thermoplastic elastomer would be contrary to the express disclosure of Chihara. The examiner respectfully disagrees. Chihara teaches that the coating may be applied to "elastomeric substrates" (col 1, line 15) and is not limited the EPDM substrates. Thus, Applicant's arguments are not persuasive.

Conclusion

Applicant's amendment necessitated the new ground(s) of rejection presented in this Office action. Accordingly, **THIS ACTION IS MADE FINAL**. See MPEP

§ 706.07(a). Applicant is reminded of the extension of time policy as set forth in 37 CFR 1.136(a).

A shortened statutory period for reply to this final action is set to expire THREE MONTHS from the mailing date of this action. In the event a first reply is filed within TWO MONTHS of the mailing date of this final action and the advisory action is not mailed until after the end of the THREE-MONTH shortened statutory period, then the shortened statutory period will expire on the date the advisory action is mailed, and any extension fee pursuant to 37 CFR 1.136(a) will be calculated from the mailing date of the advisory action. In no event, however, will the statutory period for reply expire later than SIX MONTHS from the date of this final action.

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Kevin R Kruer whose telephone number is 571-272-1510. The examiner can normally be reached on Monday-Friday.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Deborah Jones can be reached on 571-272-1535. The fax phone number for the organization where this application or proceeding is assigned is 703-872-9306.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see http://pair-direct.uspto.gov. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).

K-RK

Kevin R. Kruer
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D. S. NAKARANI
PRIMARY EXAMINER